
Product Data Sheet

Product Name: Ibufenac
Cat. No.: GC18010

Chemical Properties

Cas. No. 1553-60-2

Chemical Name 4-(2-methylpropyl)-benzeneacetic acid

SMILES CC(C)CC1=CC=C(CC(O)=O)C=C1

Formula $C_{12}H_{16}O_2$ M.Wt 192.3

Solubility $\geq 6.9\text{mg/mL}$ in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

IC₅₀: 17.4 and 13.1 μM for COX-1 and -2, respectively.

Ibufenac is a dual COX-1 and -2 inhibitor.

Cyclooxygenase (COX), also known as prostaglandin-endoperoxide synthase (PTGS), is an enzyme that is responsible for formation of prostanoids, such as thromboxane and prostaglandins.

In vitro: Ibufenac was identified as an analog of the NSAID ibuprofen that could inhibit COX-1 and -2 activity with IC₅₀ values of 17.4 and 13.1 μM , respectively [1].

In vivo: In a previous animal study, two new structural analogs, R3 and R4, along with their parent compounds, ibufenac and ibuprofen, were evaluated for their biopharmaceutical properties. Anti-inflammatory activity was evaluated by topically administering drugs to inhibit inflammation induced by using either clove oil or

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arachidonic acid. Results showed that the rank order of activity was ibufenac approximately equal to ibuprofen > R3 approximately equal to R4 [2].

Clinical trial: Early clinical study found that ibufenac was a useful drug in the treatment of the symptoms of rheumatoid arthritis. Ibufenac appeared to be as effective as aspirin in this respect at the dosage levels applied and its usage was associated with considerably fewer side effects [3].

References:

- [1] Gülcan, H. O.,nlü, S.,Dimoglo, A., et al. Marginally designed new profen analogues have the potential to inhibit cyclooxygenase enzymes. Arch.Pharm.Chem.Life Sci. 348, 55-61 (2015).
- [2] Rao CS, Schoenwald RD, Barfknecht CF, Laban SL. Biopharmaceutical evaluation of ibufenac, ibuprofen, and their hydroxyethoxy analogs in the rabbit eye. J Pharmacokinet Biopharm. 1992 Aug;20(4):357-88.
- [3] T. M. Chalmers. Clinical Trials of a New Drug, Ibufenac, in the Treatment of Rheumatoid Arthritis Ann Rheum Dis. 1963 Sep; 22(5): 358–362.

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